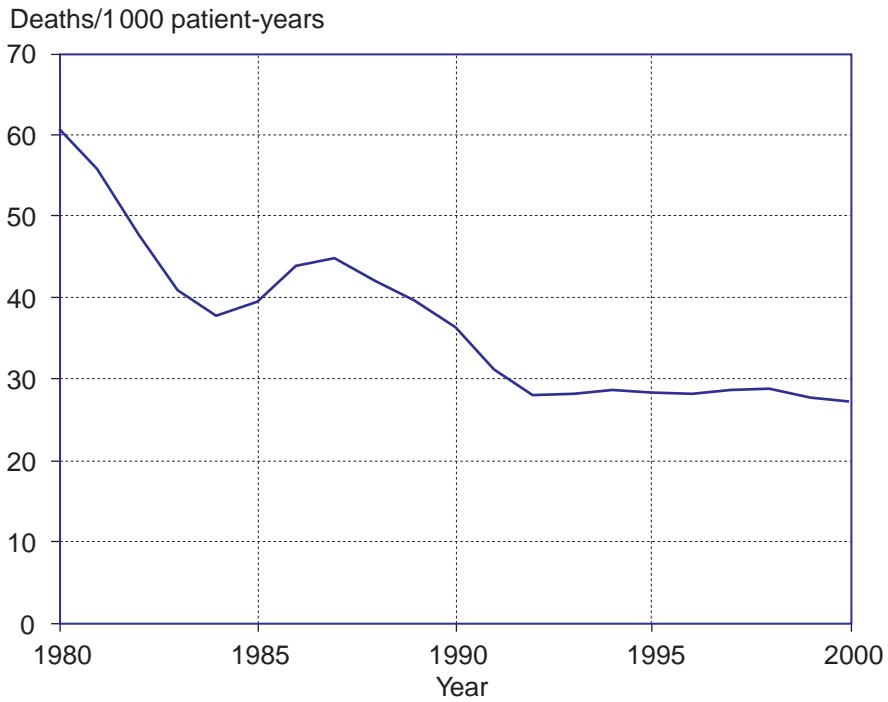
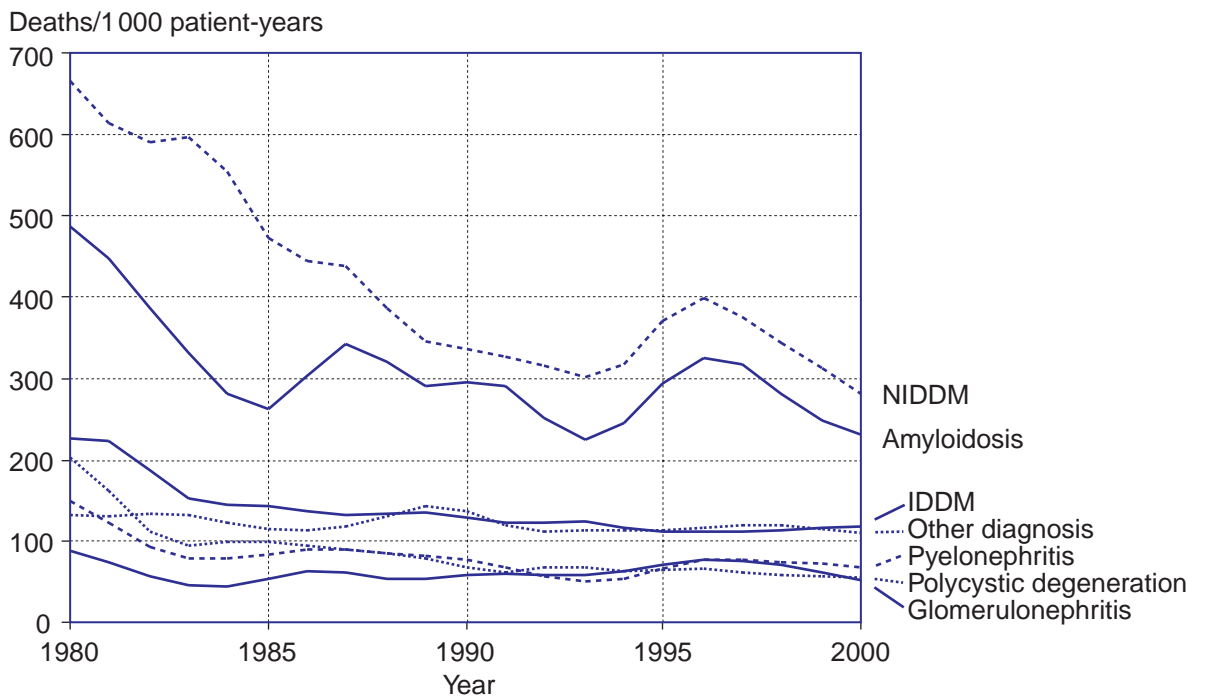


# Report 2000

Mortality of transplantation patients



Mortality of RRT patients according to diagnosis



# Finnish Registry for Kidney Diseases – Report 2000

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## *Finnish Registry for Kidney Diseases – Report 2000*

The Finnish Registry for Kidney Diseases annually presents statistics on patients in renal replacement therapy (RRT). By the end of the year 2000, 1 828 patients in Finland had a kidney transplant and a further 1 186 were receiving dialysis. The number of RRT patients per million inhabitants had increased from the previous year in all health care districts. The number of patients in the entire country had increased by 7% in one year and 26% in five years. The annual number of new patients has also continuously increased, being 22% higher in 2000 than in 1996.

This report includes analyses of RRT patients' treatment for high blood pressure and transplantation patients' immunosuppressive treatment. The use of treatment for high blood pressure has increased in all treatment groups, and the proportion of patients with hypertension was smaller in the year 2000 than five years earlier. RRT patients' mortality was also analysed. Mortality has virtually remained unchanged since 1983, although patients have gotten older.

Data from the Finnish transplantation registry were used for updating the statistics in this report.

Helsinki, 31 October 2001

*Patrik Finne*  
*Administrative Director*

*Carola Grönhagen-Riska*  
*Chairman of the Board*

### *The Board of the Finnish Registry for Kidney Diseases*

Sirpa Aalto, MSc  
Ilpo Ala-Houhala, MD  
Agneta Ekstrand, docent  
Carola Grönhagen-Riska, professor  
Patrik Finne, MD  
Erkki Lampainen, MD  
Marjatta Linnanvuo-Laitinen, MD  
Kaj Metsärinne, docent  
Maija Piitulainen  
Kai Rönholm, MD  
Kaija Salmela, docent  
Svante Stenman, docent

Table 1. The Finnish population and its distribution in health care districts (1 000 inhabitants)  
Finnish Registry for Kidney Diseases 1992–2000

Health care district		Year							Change (%) 1992–2000
		1992	1994	1996	1997	1998	1999	2000	
1	Helsinki-Uusimaa	1 259	1 290	1 324	1 342	1 360	1 375	1 391	10.48
3	Varsinais-Suomi	444	438	443	445	448	451	453	2.03
4	Satakunta	235	238	236	235	234	232	231	-1.70
5	Kanta-Häme	160	165	165	165	165	165	165	3.13
6	Pirkanmaa	436	436	441	443	446	448	448	2.75
7	Päijät-Häme	200	206	205	205	205	207	205	2.50
8	Kymenlaakso	190	189	187	186	185	184	183	-3.68
9	Etelä-Karjala	132	132	131	131	130	130	130	-1.52
10	Etelä-Savo	111	110	109	109	108	107	107	-3.60
11	Itä-Savo	72	71	70	69	68	67	67	-6.94
12	Pohjois-Karjala	180	180	178	177	176	174	173	-3.89
13	Pohjois-Savo	259	259	258	257	255	254	252	-2.70
14	Keski-Suomi	261	258	259	260	260	261	264	1.15
15	Etelä-Pohjanmaa	197	202	200	199	198	197	196	-0.51
16	Vaasa	167	167	167	167	167	166	166	-0.60
17	Keski-Pohjanmaa	79	80	80	79	79	79	78	-1.27
18	Pohjois-Pohjanmaa	354	358	363	364	365	367	369	4.24
19	Kainuu	92	91	90	89	88	87	86	-6.52
20	Länsi-Pohja	72	72	71	71	70	69	69	-4.17
21	Lappi	130	130	128	127	125	125	122	-6.15
22	Åland	25	25	26	27	27	26	27	8.00
Region South		1 580	1 611	1 642	1 659	1 675	1 689	1 704	7.85
South-West		704	702	709	710	712	709	711	0.99
West		1160	1176	1 178	1 180	1 181	1 184	1 181	1.81
East		883	878	874	871	867	863	862	-2.38
North		727	732	729	728	725	726	724	-0.41
Entire country		5 055	5 099	5 132	5 147	5 160	5 171	5 181	2.49

On 31 December 2000, there were 5.18 million inhabitants in Finland (Table 1). Since 1992 the population has increased most in the southern region (7.85%). In the eastern and northern regions, populations have decreased. At the beginning of the year 2000, the health care districts of Helsinki and Uusimaa fused. The new health care district covers 27% of the Finnish population. During the past eight years the population has decreased in 13 health care districts and increased in eight districts, the greatest increase occurring in the Helsinki-Uusimaa district. In health care districts with decreasing numbers of inhabitants, the overall age of the population tends to increase, resulting in increased incidence and prevalence of most diseases.

The numbers in Figure 1 refer to the health care districts listed in Table 1. In this report “region” refers to university hospital region.

Figure 1. Health care districts and regions in Finland  
Finnish Registry for Kidney Diseases 2000

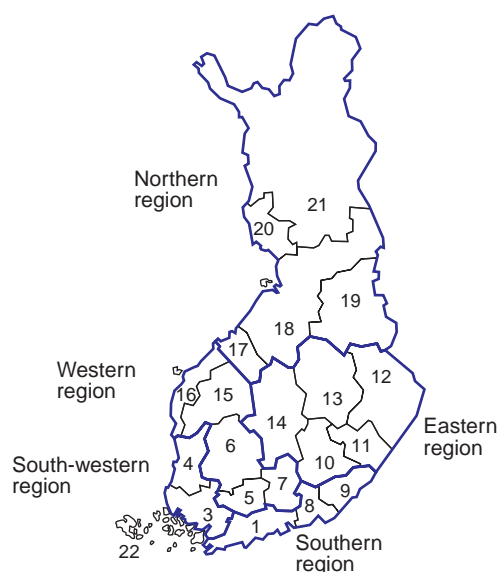
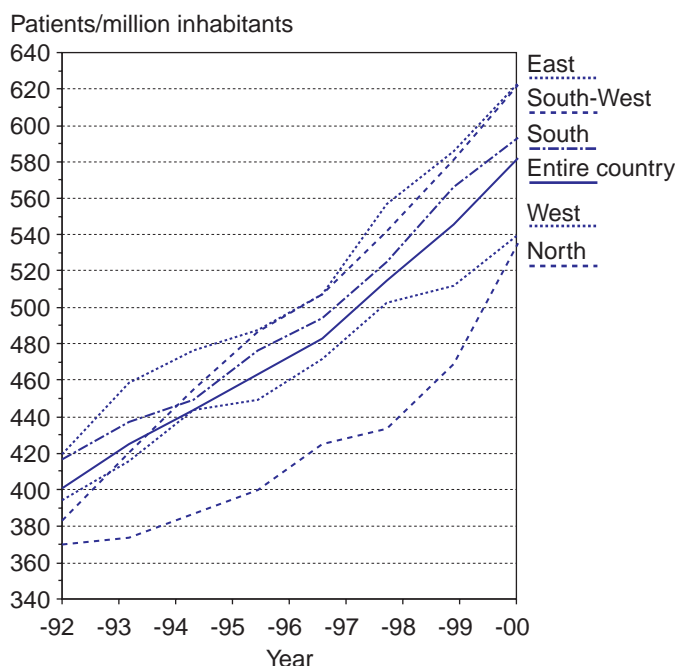


Table 2. Number of patients in health care districts and regions  
Finnish Registry for Kidney Diseases 1996–2000

Health care district	Patients in the district					Patients/million inhabitants					
	1996	1997	1998	1999	2000	1996	1997	1998	1999	2000	
1	Helsinki-Uusimaa	643	673	726	790	830	489	502	534	575	597
3	Varsinais-Suomi	217	227	239	264	280	490	510	533	585	619
4	Satakunta	114	116	130	132	145	483	494	556	568	628
5	Kanta-Häme	57	58	64	65	73	346	351	388	393	442
6	Pirkanmaa	231	243	261	278	295	524	548	585	620	658
7	Päijät-Häme	94	99	102	103	104	458	482	497	498	508
8	Kymenlaakso	80	87	92	96	97	428	468	497	521	530
9	Etelä-Karjala	58	60	61	68	84	443	458	468	524	648
10	Etelä-Savo	39	39	47	47	52	357	359	435	438	488
11	Itä-Savo	32	36	41	43	49	458	521	600	637	736
12	Pohjois-Karjala	84	91	92	92	101	471	514	524	528	583
13	Pohjois-Savo	170	168	186	199	209	660	654	729	784	829
14	Keski-Suomi	107	108	118	123	126	413	416	454	472	477
15	Etelä-Pohjanmaa	81	81	82	88	91	405	407	414	446	464
16	Vaasa	67	76	85	74	74	401	455	509	445	446
17	Keski-Pohjanmaa	26	27	28	32	35	327	341	355	408	448
18	Pohjois-Pohjanmaa	149	149	154	169	195	410	409	422	461	528
19	Kainuu	33	40	41	49	53	365	448	464	564	618
20	Länsi-Pohja	34	32	30	31	38	476	452	429	448	554
21	Lappi	54	61	61	61	66	423	482	488	488	542
22	Åland	16	17	17	16	17	605	641	639	622	624
Region	South	781	820	879	954	1011	476	494	525	565	593
	South-West	347	360	386	412	442	490	507	542	581	622
	West	530	557	594	608	637	450	472	503	514	540
	East	432	442	484	504	537	494	507	558	584	623
	North	296	309	314	342	387	406	425	433	471	535
Entire country		2 386	2 488	2 657	2 820	3 014	465	483	515	545	582

Figure 2. Prevalence of RRT in regions  
Finnish Registry for Kidney Diseases 1992–2000



The number of patients in renal replacement therapy (RRT) per million inhabitants by the end of the year had increased in all health care districts from the previous year (Table 2). The increase was largest in the health care districts of Etelä-Karjala and Länsi-Pohja (24%). In the northern region, the number of RRT patients had increased the most (14%), and in the southern region the least (5%) during the past year. The five-year increase was also the largest in the northern region (32%). During 1992–2000 the prevalence of RRT was highest in the eastern region and lowest in the northern region (Figure 2).

Table 3. The Finnish population according to age group (1 000 inhabitants) (%)  
Finnish Registry for Kidney Diseases 2000

Region	Age group (years)								Entire country	
	0–14 (%)		15–64 (%)		65–74 (%)		≥ 75 (%)			
South	309	(18)	1 179	(69)	122	(7)	94	(6)	1 704	(100)
South-West	122	(17)	471	(66)	65	(9)	53	(8)	711	(100)
West	210	(18)	776	(66)	107	(9)	88	(7)	1 181	(100)
East	151	(17)	566	(66)	83	(10)	63	(7)	862	(100)
North	145	(20)	477	(66)	60	(8)	42	(6)	724	(100)
Entire country, 2000	936	(18)	3 468	(67)	437	(8)	340	(7)	5 181	(100)
Entire country in previous years										
1999	943	(18)	3 461	(67)	436	(8)	331	(6)	5 171	(100)
1998	951	(18)	3 450	(67)	435	(8)	323	(6)	5 160	(100)

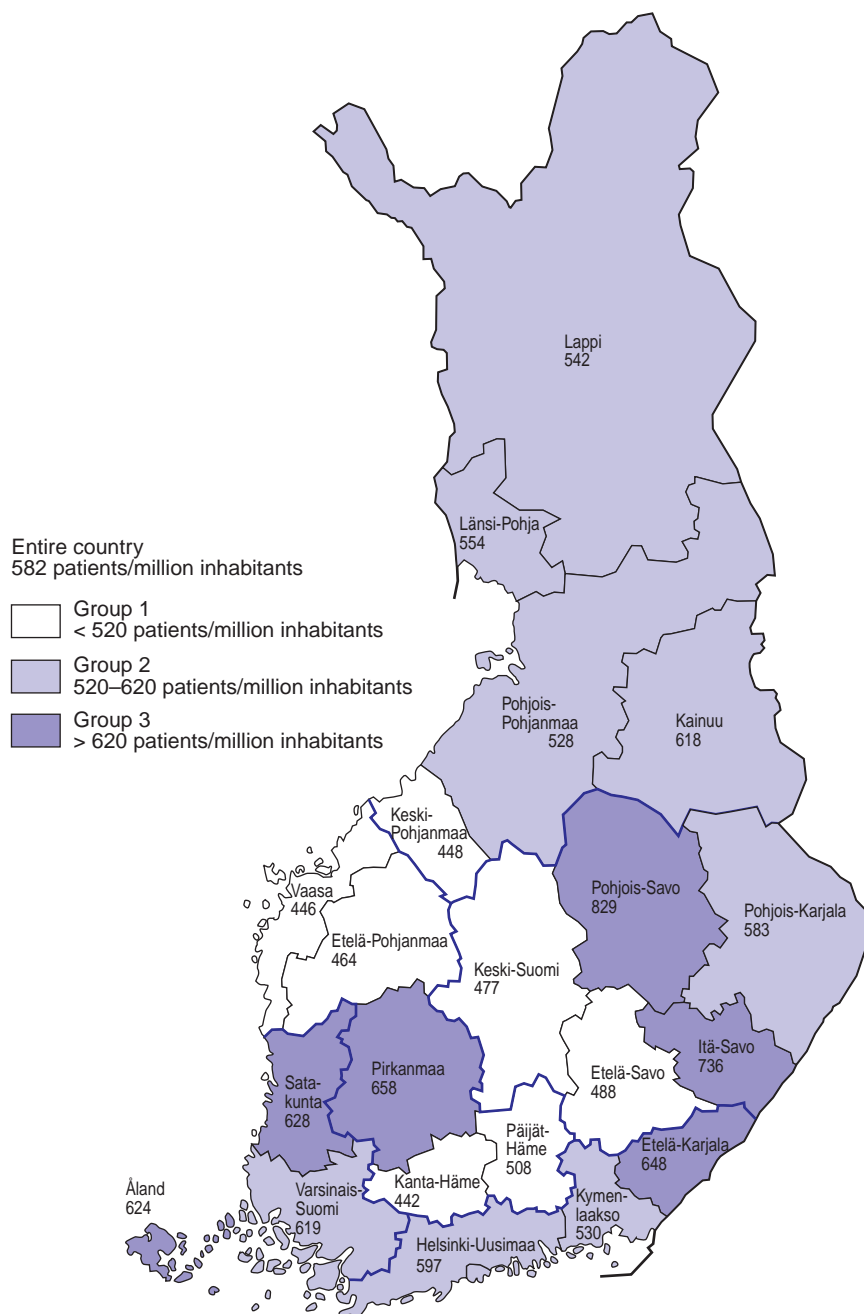
Table 4. Number of patients according to region and age group  
Finnish Registry for Kidney Diseases 2000

Region	Patients in age group				Patients/million in age group			
	0–14 y	15–64 y	65–74 y	≥ 75 y	0–14 y	15–64 y	65–74 y	≥ 75 y
South	31	732	188	60	100	621	1 541	637
South-West	7	292	112	31	57	620	1 730	581
West	22	443	113	59	105	571	1 058	670
East	20	370	113	34	133	654	1 356	542
North	8	293	72	14	55	614	1 202	334
Entire country, 2000	88	2 130	598	198	94	614	1 369	582
Entire country in previous years 1999								
1999	86	2 057	508	170	91	594	1 166	513
1998	72	1 958	456	141	76	575	1 047	436

Table 3 presents the age distribution in different regions on 31 December 2000. The proportion of inhabitants older than 65 years was smallest in the southern (13%) and northern (14%) regions. In the other regions this proportion was 16–17%. The proportion of 15–64-year-olds was larger in the southern region (69%) than elsewhere (66%). The age distribution of the population overall has remained unchanged during the past three years.

The prevalence of RRT in inhabitants older than 65 years was 1 147 in the southern, 1 211 in the south-western, 882 in the western, 1 006 in the eastern, 844 in the northern and 1 024 patients per million inhabitants in the age group in the entire country (Table 4). Among 15–64-year-olds the prevalence of RRT was similar in all regions. During the past three years the prevalence has increased by 30% in inhabitants older than 65 years and 7% in 15–64-year-olds.

Figure 3. Prevalence of RRT in health care districts on 31 December 2000  
Finnish Registry for Kidney Diseases 2000

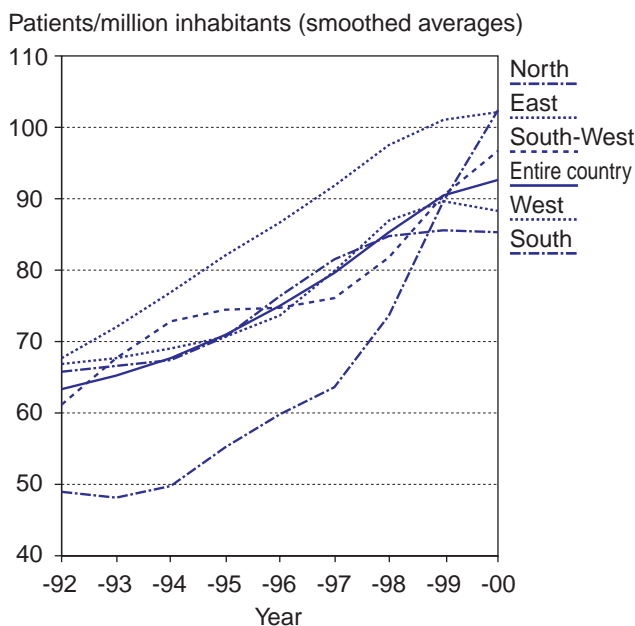


The health care districts shown on the map are grouped according to the prevalence of RRT at the end of 2000 (Figure 3). The prevalence was < 520 in seven districts, 520–620 in eight districts and > 620 patients/million inhabitants in six districts. The borders of the regions are indicated with thick lines.

Table 5. Number of new patients in health care districts  
Finnish Registry for Kidney Diseases 1996–2000

Health care district	New patients						New patients/million inhabitants						
	1996	1997	1998	1999	2000	1996–2000 on average	1996	1997	1998	1999	2000	1996–2000 on average	
1	Helsinki-Uusimaa	100	109	125	116	108	111	76	81	92	84	78	82
3	Varsinais-Suomi	34	31	42	44	43	43	77	70	94	98	95	87
4	Satakunta	23	12	20	16	26	21	97	51	86	69	113	83
5	Kanta-Häme	10	8	16	15	16	16	61	48	97	91	97	79
6	Pirkanmaa	40	38	48	50	51	50	91	86	108	112	114	102
7	Päijät-Häme	9	17	14	19	13	15	44	83	68	92	63	70
8	Kymenlaakso	21	13	12	16	16	15	112	70	65	87	87	84
9	Etelä-Karjala	8	12	11	13	20	15	61	92	84	100	154	97
10	Etelä-Savo	5	4	10	5	6	7	46	37	93	47	56	57
11	Itä-Savo	5	10	16	10	8	11	72	145	234	148	120	144
12	Pohjois-Karjala	12	12	14	15	16	15	67	68	80	86	92	79
13	Pohjois-Savo	31	21	34	27	37	33	120	82	133	106	147	118
14	Keski-Suomi	26	22	21	26	23	23	100	85	81	100	87	91
15	Etelä-Pohjanmaa	13	11	15	17	16	16	65	55	76	86	82	73
16	Vaasa	11	16	17	9	5	10	66	96	102	54	30	70
17	Keski-Pohjanmaa	5	5	7	8	7	7	63	63	89	102	90	81
18	Pohjois-Pohjanmaa	28	17	22	35	36	31	77	47	60	95	97	75
19	Kainuu	3	9	6	12	12	10	33	101	68	138	140	96
20	Länsi-Pohja	6	2	4	6	9	6	84	28	57	87	131	77
21	Lappi	2	11	8	7	16	10	16	87	64	56	131	71
22	Åland	2	1	1	1	4	2	76	38	38	39	147	67
<hr/>													
Region	South	129	134	148	145	144	146	79	81	88	86	85	83
	South-West	59	44	63	61	73	66	83	62	89	86	103	84
	West	83	90	110	110	101	107	70	76	93	93	86	84
	East	79	69	95	83	90	89	90	79	110	96	104	97
	North	44	44	47	68	80	65	60	60	65	94	111	78
<hr/>													
Entire country		394	381	463	467	488	473	77	74	90	90	94	85
	Children < 15 y	4	6	9	17	8	9	4	6	9	18	9	9

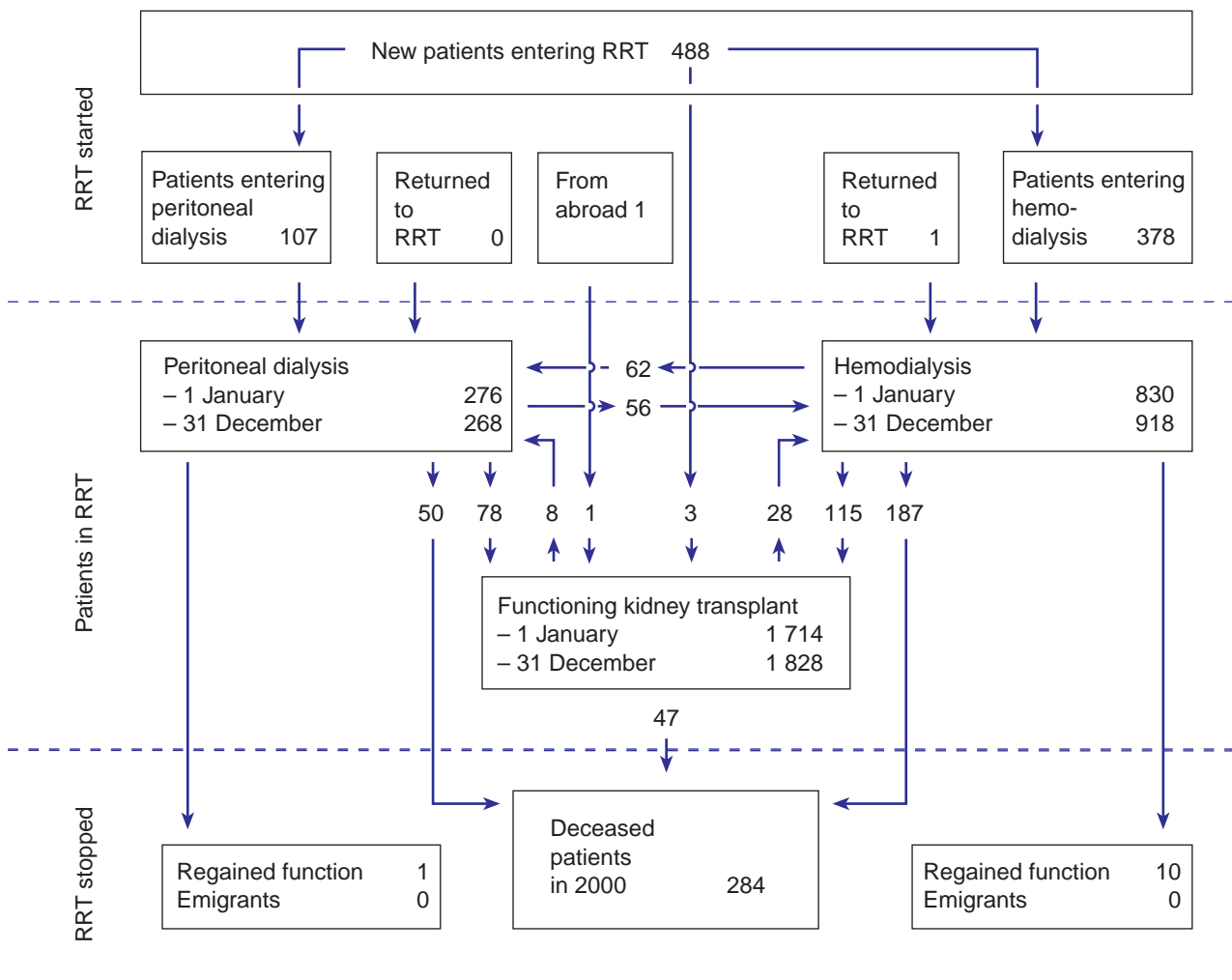
Figure 4. Incidence of RRT in different regions  
Finnish Registry for Kidney Diseases 1992–2000



The incidence of RRT is given in Table 5. During 1996–2000 the average incidence was highest in Itä-Savo (144/million inhabitants) and lowest in Etelä-Savo (57/million inhabitants). The incidence has increased during the past five years in all regions, the least in the southern region (8%) and the most in the northern region (83%).

Figure 4 gives the incidence in the regions as smoothed averages. In the northern region, the incidence was the lowest in the country until 1998, but in 2000 it was the highest.

Figure 5. Net changes in type of treatment  
Finnish Registry for Kidney Diseases 2000



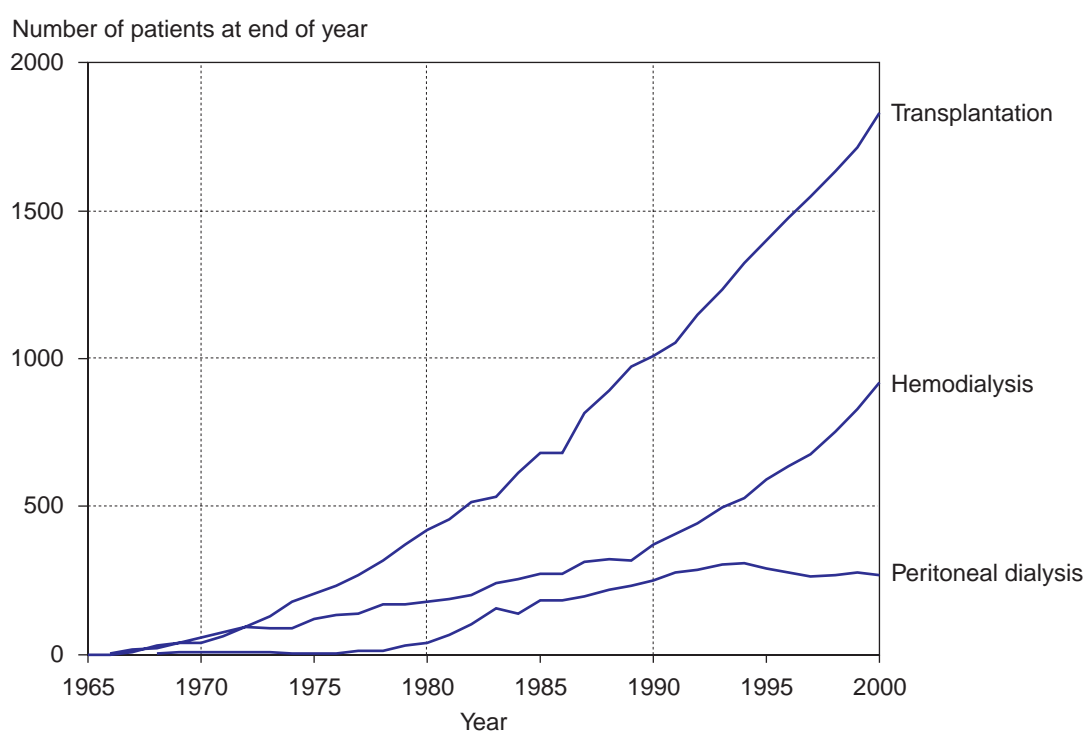
During 2000, 488 new patients entered RRT and one patient returned to RRT (Figure 5). There were 2 820 patients in RRT at the beginning of 2000 and 3 014 by the end of the year. Altogether 284 patients died and dialysis for 11 patients was discontinued because the patients' own kidney function

resumed. Of the patients who died during the year, 47 had a functioning transplant, 50 were receiving peritoneal dialysis, and 187 were in hemodialysis.

Table 6. Number of patient-years according to type of treatment  
Finnish Registry for Kidney Diseases 1996–2000

Type of treatment	Patient-years (%)				
	1996	1997	1998	1999	2000
Peritoneal dialysis	285 (12.2)	274 (11.2)	258 (10.1)	285 (10.4)	281 (9.6)
Hemodialysis	612 (26.2)	656 (26.8)	722 (28.2)	795 (28.9)	873 (29.8)
Transplantation	1 442 (61.6)	1 513 (61.9)	1 582 (61.7)	1 666 (60.7)	1 776 (60.6)
All	2 339 (100)	2 442 (100)	2 562 (100)	2 746 (100)	2 929 (100)
Increase from previous years (%)		4.4	4.9	7.2	6.7

Figure 6. Number of patients according to type of treatment  
Finnish Registry for Kidney Diseases 1965–2000



Since 1996 the number of patient-years in RRT has increased 4–7% per year, for an overall increase of 25% (Table 6). The number of patient-years in hemodialysis has increased the most, 43% since 1996. The proportion of patient-years has increased 3.6 percentage units in hemodialysis and decreased 2.6 percentage units in peritoneal dialysis. The proportion of patient-years in transplantation patients has

remained almost constant (60.6–61.9%).

The number of transplantation and hemodialysis patients has increased by 82% and 147%, respectively, over the past 10 years, whereas the number of patients in peritoneal dialysis has remained virtually unchanged (Figure 6).

Table 7. Number of patient-years according to diagnosis  
Finnish Registry for Kidney Diseases 1996–2000

Diagnosis	Patient-years (%)				
	1996	1997	1998	1999	2000
Glomerulonephritis	687 (29.4)	694 (28.4)	702 (27.4)	723 (26.3)	749 (25.6)
IDDM	430 (18.4)	447 (18.3)	471 (18.4)	500 (18.2)	507 (17.3)
Polycystic degeneration	261 (11.2)	282 (11.6)	312 (12.2)	337 (12.3)	361 (12.3)
Pyelonephritis	245 (10.5)	248 (10.1)	249 (9.7)	254 (9.3)	258 (8.8)
NIDDM	98 (4.2)	117 (4.8)	140 (5.5)	157 (5.7)	197 (6.7)
Undefined kidney disease	76 (3.2)	85 (3.5)	101 (3.9)	119 (4.3)	139 (4.8)
Amyloidosis	109 (4.7)	104 (4.2)	102 (4.0)	113 (4.1)	125 (4.3)
Nephrosclerosis	77 (3.3)	95 (3.9)	98 (3.8)	117 (4.3)	125 (4.3)
Other systemic diseases	79 (3.4)	78 (3.2)	82 (3.2)	86 (3.1)	98 (3.3)
Urinary tract obstruction	75 (3.2)	84 (3.4)	88 (3.4)	93 (3.4)	96 (3.3)
Congenital diseases	78 (3.3)	78 (3.2)	80 (3.1)	87 (3.2)	92 (3.2)
Congenital nephrosis, Finnish type	44 (1.9)	44 (1.8)	46 (1.8)	49 (1.8)	52 (1.8)
Tubulointerstitial nephritis	50 (2.1)	51 (2.1)	52 (2.0)	50 (1.8)	51 (1.8)
Other kidney diseases	14 (0.6)	15 (0.6)	18 (0.7)	32 (1.2)	45 (1.5)
Malignancies	11 (0.5)	12 (0.5)	14 (0.5)	19 (0.7)	22 (0.8)
Metabolic diseases	8 (0.3)	8 (0.3)	9 (0.3)	9 (0.3)	10 (0.4)
All	2 339 (100)	2 442 (100)	2 562 (100)	2 746 (100)	2 929 (100)

Figure 7. Number of patients according to diagnosis  
Finnish Registry for Kidney Diseases 1965–2000

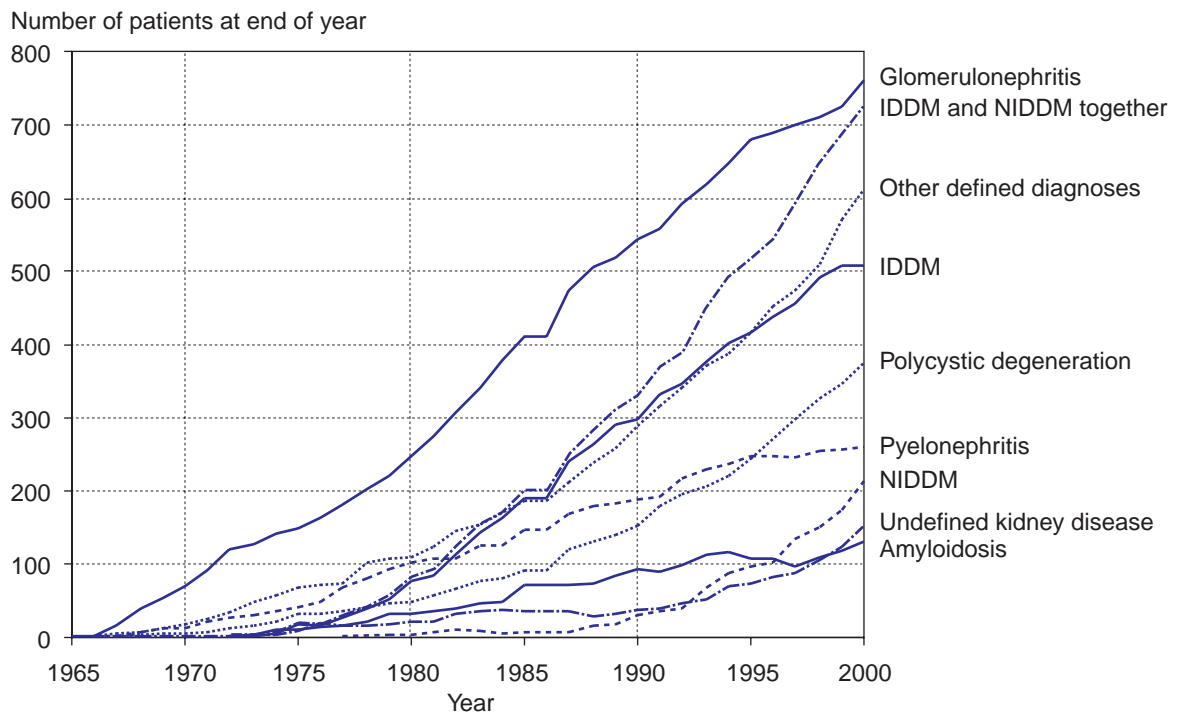


Table 7 shows the number of patient-years according to diagnosis during 1996–2000. Glomerulonephritis was clearly the most common diagnosis, although its proportion of all patient-years has decreased 3.8 percentage units over the past five years. The second most common diagnosis was insulin-dependent diabetes mellitus (IDDM) (17.3%). Non-IDDM (NIDDM) was the fifth most common diagnosis with its number of patient-years doubling in five years. The six

most common diagnoses constitute 75% of all patient-years.

The number of RRT patients at the end of the year is shown according to diagnosis in Figure 7. Glomerulonephritis has been the most common diagnosis since 1965, and IDDM the second most common diagnosis since 1982. The group “other defined diagnoses” includes nephrosclerosis, other systemic diseases, urinary tract obstruction and tubulointerstitial nephritis (see also Table 7).

Figure 8. Number of new patients according to diagnosis  
Finnish Registry for Kidney Diseases 1965–2000

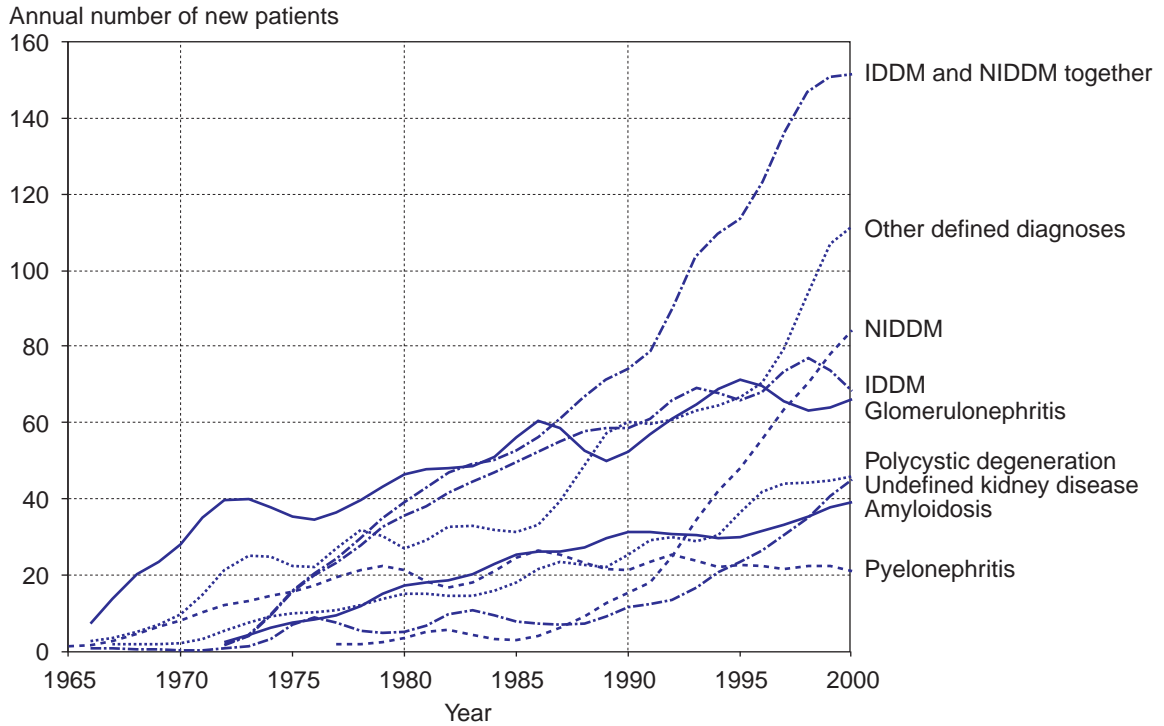


Figure 9. Mean age of new RRT patients  
Finnish Registry for Kidney Diseases 1965–2000

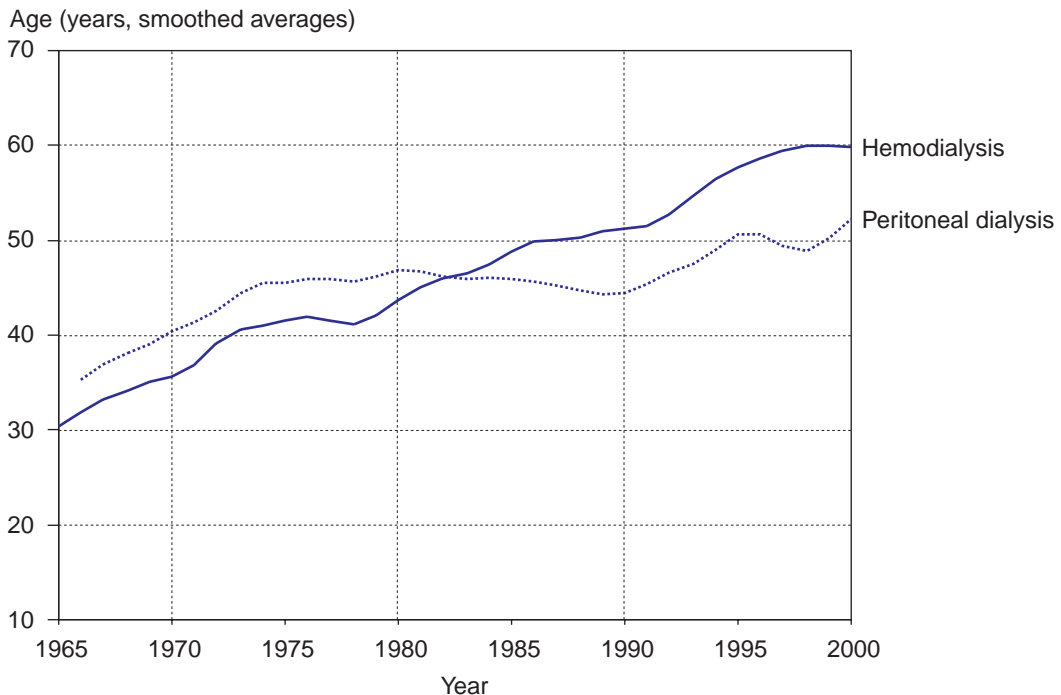


Figure 8 shows, as smoothed averages, the annual number of new RRT patients according to diagnosis. Diabetes has been the most common disease causing chronic uremia since 1987, and since 1990 the number of new diabetes patients in RRT has increased by 115%. The annual numbers of new RRT patients with glomerulonephritis (26%), polycystic degeneration (82%) and amyloidosis (24%) have also increased over the past 10 years. The annual number of

new pyelonephritis patients has not changed considerably for more than 20 years.

The age of new hemodialysis patients has increased faster than that of new peritoneal dialysis patients (Figure 9). In 2000 the age of new hemodialysis and peritoneal dialysis patients was on average 59 and 55 years, respectively.

Table 8. Number of patient-years according to age group  
Finnish Registry for Kidney Diseases 1996–2000

Age group (years)	Patient-years (%)									
	1996		1997		1998		1999		2000	
0–14	64	(2.7)	64	(2.6)	67	(2.6)	80	(2.9)	85	(2.9)
15–64	1 770	(75.7)	1 832	(75.0)	1 913	(74.6)	2 008	(73.1)	2 063	(70.4)
65–74	405	(17.3)	435	(17.8)	445	(17.4)	482	(17.6)	577	(19.7)
≥ 75	100	(4.3)	110	(4.5)	137	(5.4)	176	(6.4)	204	(7.0)
All	2 339	(100)	2 442	(100)	2 562	(100)	2 746	(100)	2 929	(100)

Table 9. Number of patient-years according to age group and type of treatment  
Finnish Registry for Kidney Diseases 1996–2000

Age group (years)	Patient-years (%)											
	Peritoneal dialysis		Hemodialysis		Transplantation							
	1996	2000	1996	2000	1996	2000						
0–14	11	(3.7)	12	(4.2)	0	(0.0)	2	(0.2)	54	(3.7)	71	(4.0)
15–64	187	(65.5)	168	(60.1)	365	(59.6)	451	(51.7)	1 218	(84.5)	1 443	(81.3)
65–74	64	(22.4)	75	(26.8)	182	(29.8)	264	(30.3)	159	(11.0)	238	(13.4)
≥ 75	24	(8.4)	25	(8.9)	65	(10.6)	155	(17.8)	11	(0.7)	24	(1.4)
All	285	(100)	281	(100)	612	(100)	873	(100)	1 442	(100)	1 776	(100)

The proportion of patient-years of 15–64-year-olds has decreased 5.3 percentage units during the past five years (Table 8). Correspondingly, the proportion of patient-years of patients older than 65 years has increased 5.1 percentage units and it was 27% in 2000.

During the past five years the proportion of patient-years of 15–64-year-olds and patients older than 65 years has

decreased and increased, respectively, in all treatment groups (Table 9). In 2000 the proportion of patient-years of peritoneal dialysis, hemodialysis and transplantation patients older than 65 years was 36%, 48% and 15%, respectively.

Figure 10. Number of patients in RRT on 31 December  
Finnish Registry for Kidney Diseases 1965–2000

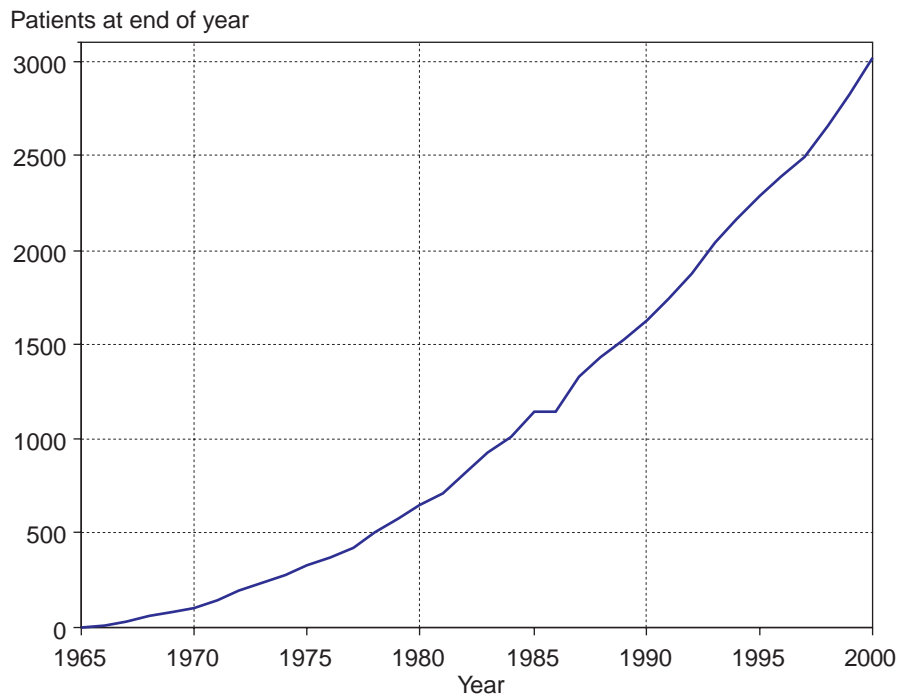
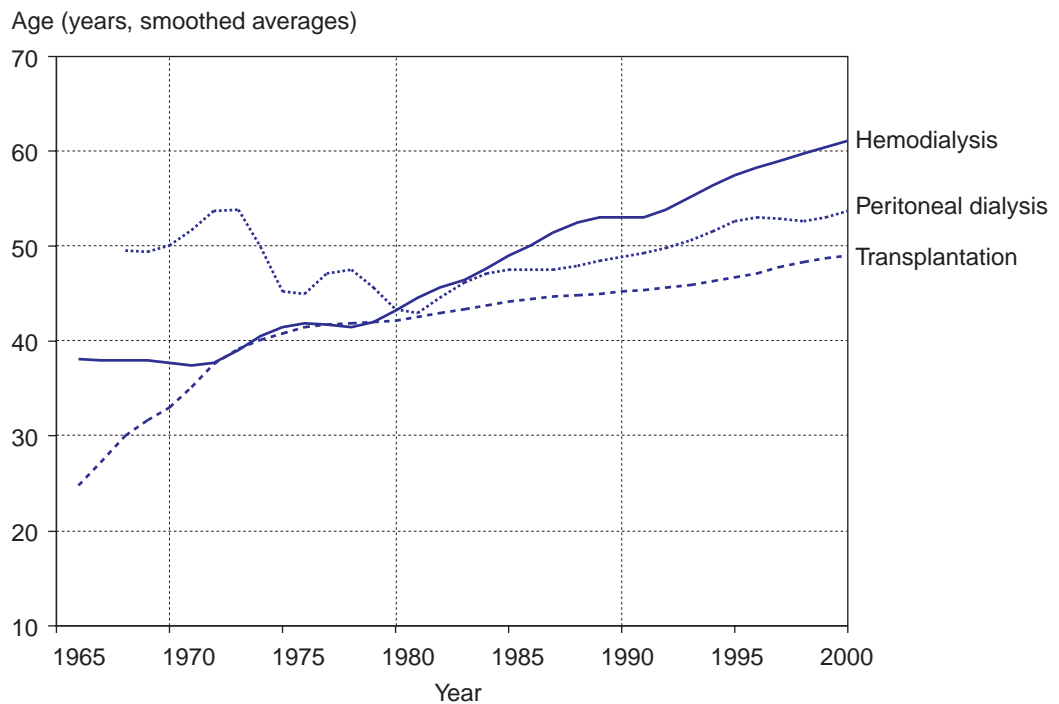


Figure 11. Mean age of patients in RRT on 31 December  
Finnish Registry for Kidney Diseases 1965–2000



The number of patients in RRT has increased continuously since 1965 (Figure 10). In 1996–2000 the number of patients increased on average 5.7% per year.

During the past 20 years the average age of hemodialysis, peritoneal dialysis and transplantation patients has increased

18, 15 and 7 years, respectively (Figure 11, smoothed averages; corresponding numbers of patients are shown in Figure 6).

Figure 12. Mean age of patients at start of dialysis  
Finnish Registry for Kidney Diseases 1965–2000

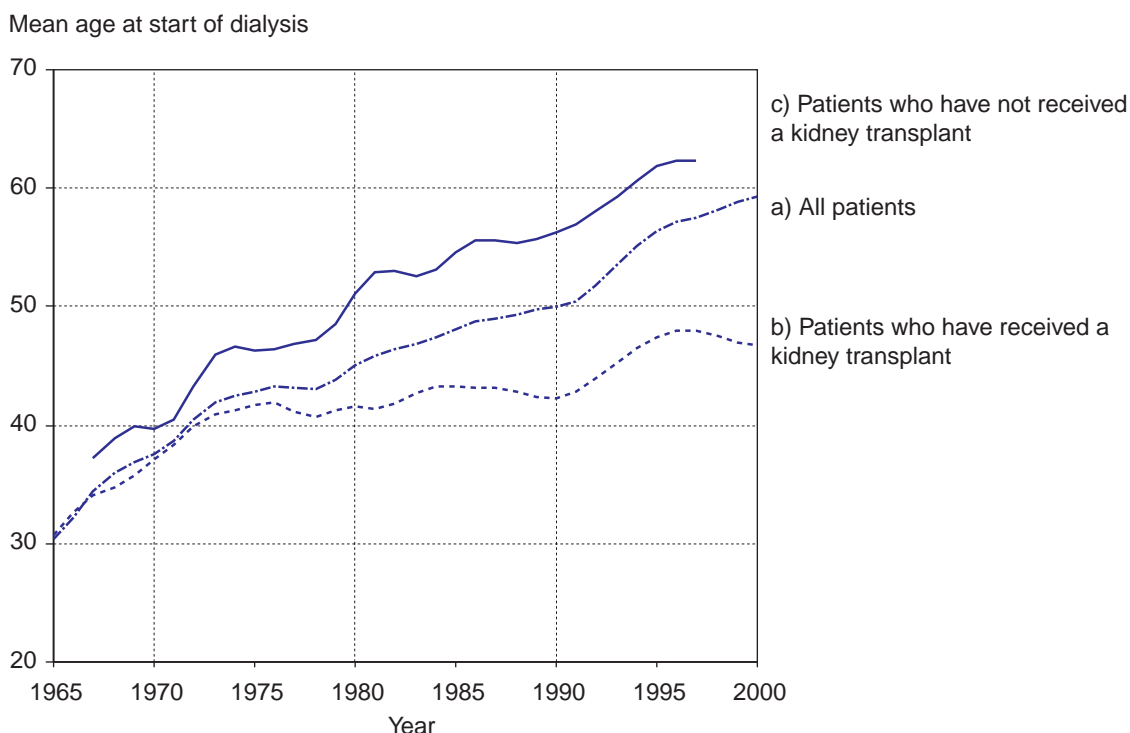
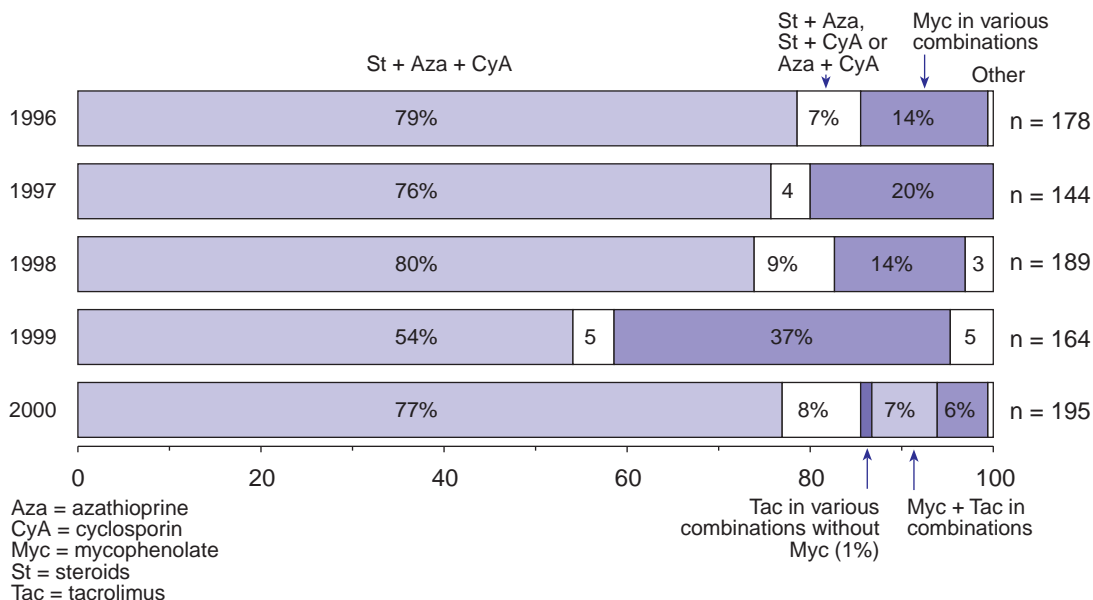


Figure 12 shows the average age at start of dialysis for a) all patients, b) patients who have received a kidney transplant, and c) patients who have not received a kidney transplant. Patients who never received a kidney transplant were more than 10 years older at start of dialysis than those who received a transplant. Patients younger than 15 years were excluded from the analysis.

Figure 13. Immunosuppressive treatment of transplantation patients  
Finnish Registry for Kidney Diseases 1996–2000



Transplantation patients' most common immunosuppressive treatment in 1996–2000 was the combination of steroids, azathioprine and cyclosporin (Figure 13). In 1999 a tacrolimus trial was conducted, with 54 patients receiving this treatment. Tacrolimus was often used in combination with

mycophenolate. This explains the large proportion of patients receiving mycophenolate in 1999 in Figure 13. The Finnish Registry for Kidney Diseases did not register use of tacrolimus before 2000.

Figure 14. Immunosuppressive treatment of patients who received their first kidney transplant in 1994 or earlier

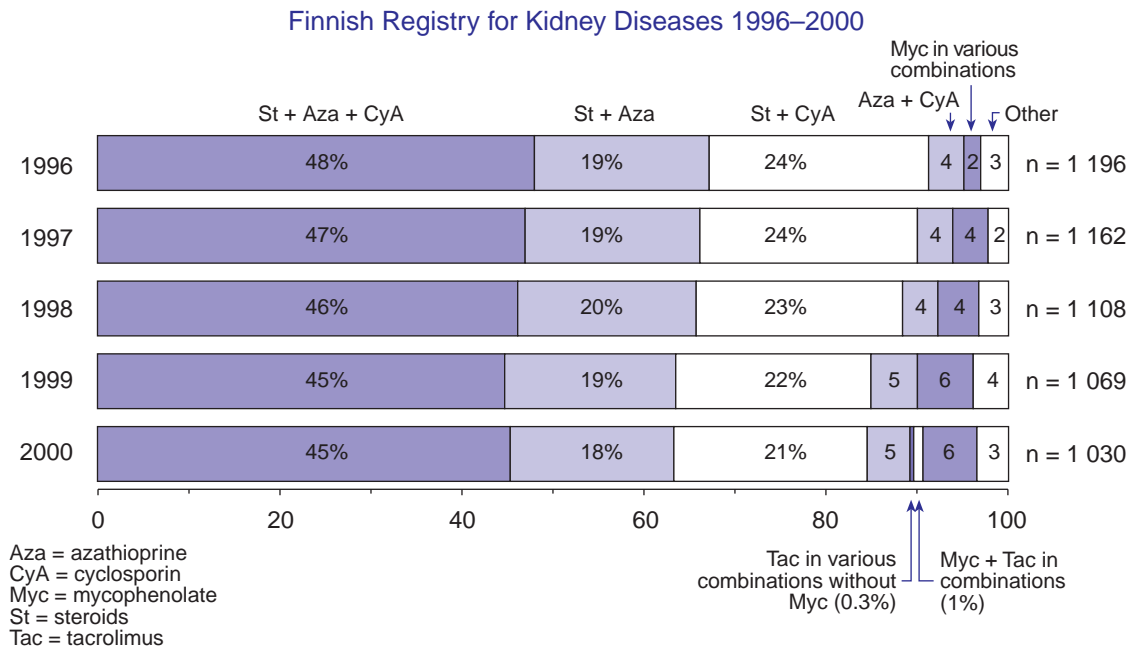
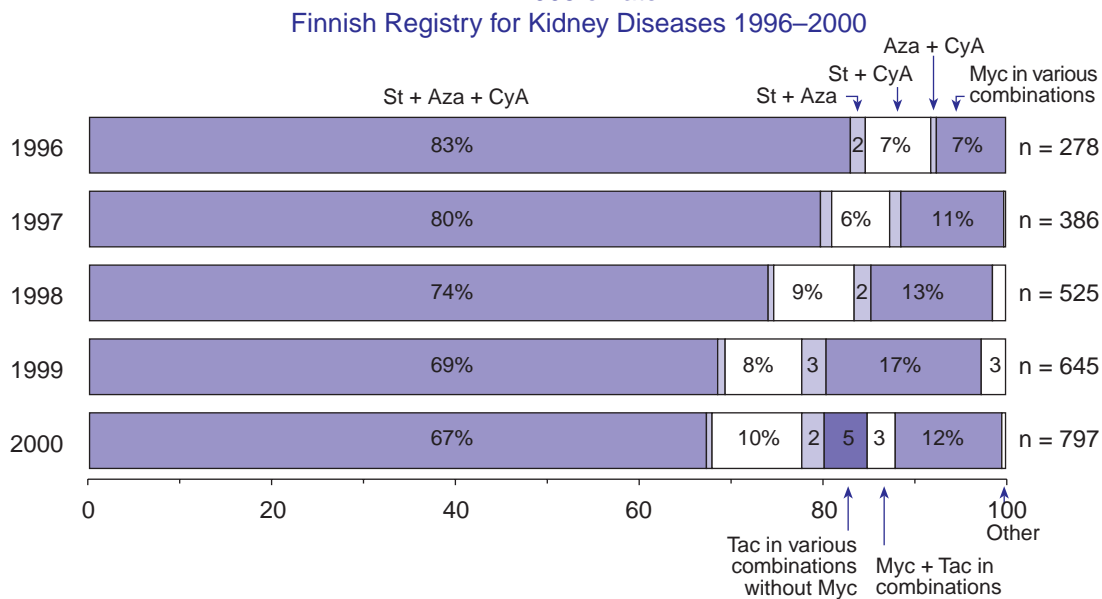


Figure 15. Immunosuppressive treatment of patients who received their first kidney transplant in 1995 or later



The distribution of various immunosuppressive treatments for all transplantation patients at the end of the years 1996–2000 is shown separately for patients receiving their first transplant in 1994 or earlier (Figure 14) and those receiving it in 1995 or later (Figure 15). Combinations of two drugs were much more common and combinations of three drugs (steroids, azathioprine and cyclosporin) much rarer

among those receiving a transplant in 1994 or earlier. Those who received a transplant in 1995 or later were more often given mycophenolate and tacrolimus.

At the end of 2000, 10% of all transplantation patients were using mycophenolate. Mycophenolate was used in combination with steroids (78%), azathioprine (4%), cyclosporin (79%) and tacrolimus (19%).

Figure 16. Treatment of high blood pressure among peritoneal dialysis patients  
Finnish Registry for Kidney Diseases 1996–2000

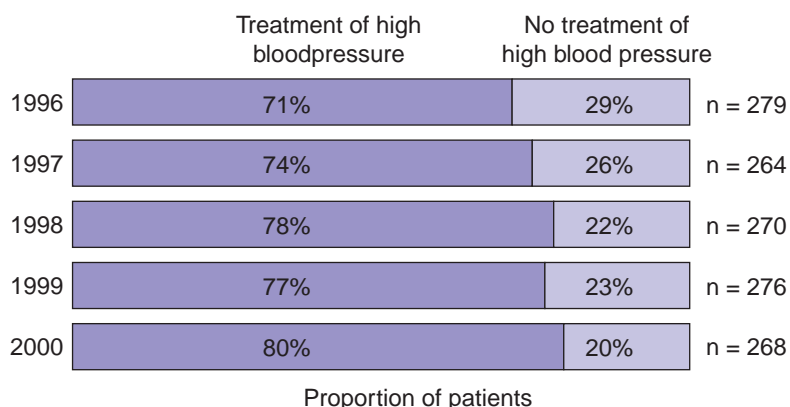


Figure 17. Treatment of high blood pressure among hemodialysis patients  
Finnish Registry for Kidney Diseases 1996–2000

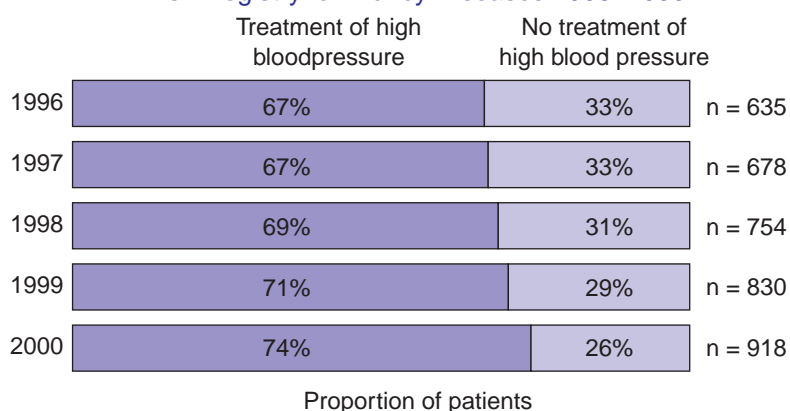
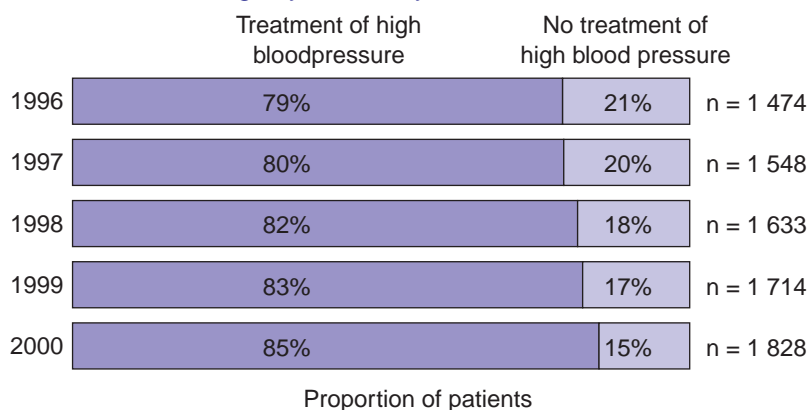


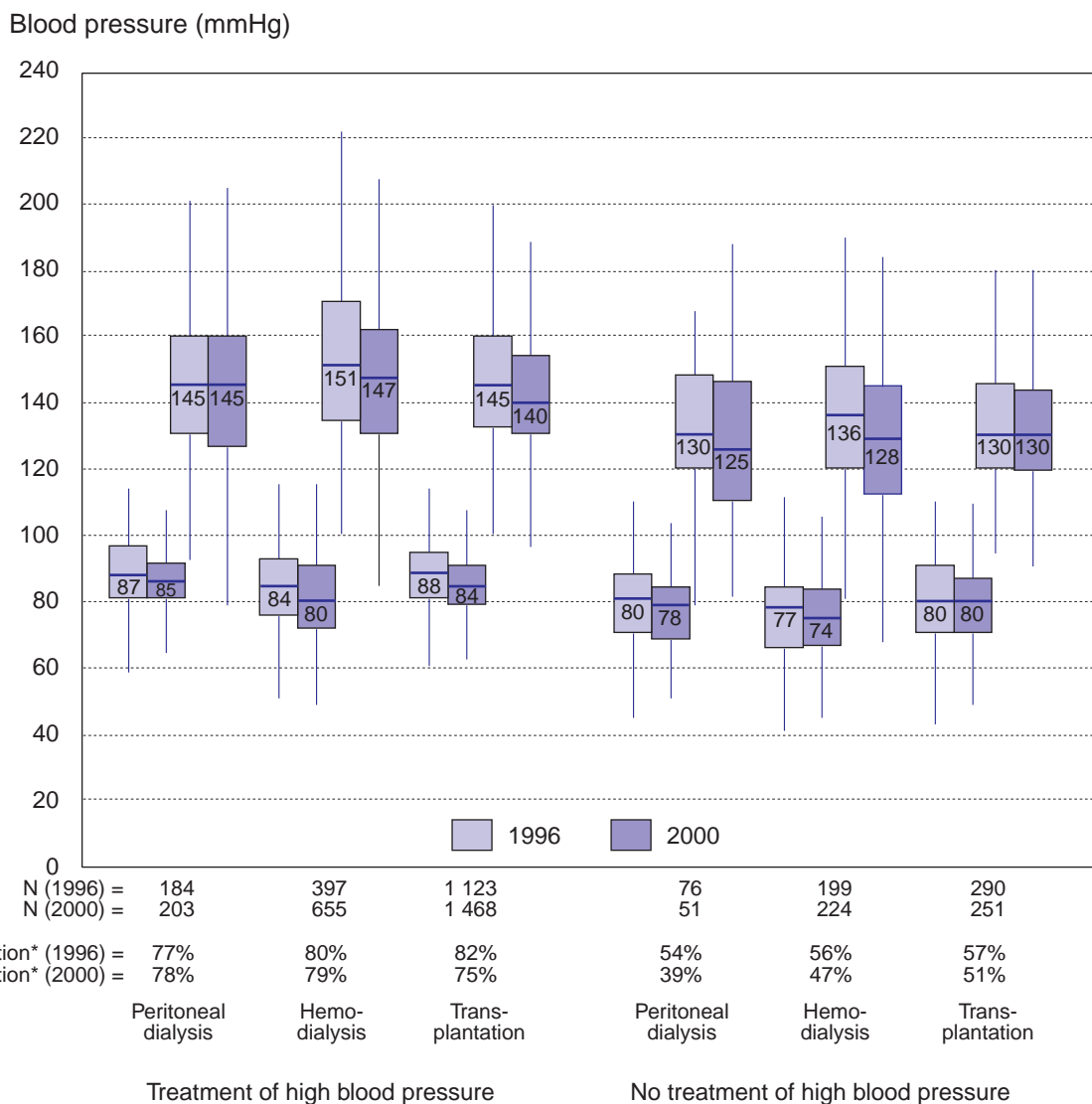
Figure 18. Treatment of high blood pressure among transplantation patients  
Finnish Registry for Kidney Diseases 1996–2000



The treatment frequency of high blood pressure has increased for peritoneal dialysis (Figure 16), hemodialysis (Figure 17) and transplantation patients (Figure 18). This is probably due to more rigorous treatment goals (Figure 19). Treatment frequency was highest in transplantation and

lowest in peritoneal dialysis patients. In dialysis patients, the high frequency may be partially due to hypervolemia. In 2000 treatment of high blood pressure was reported for 97% of the RRT patients.

Figure 19. Systolic and diastolic blood pressure according to type of treatment  
Finnish Registry for Kidney Diseases 1996–2000



\*Proportion of patients with diastolic blood pressure exceeding 85 mmHg or systolic blood pressure exceeding 130 mmHg

In 2000 blood pressure was lower in peritoneal dialysis, hemodialysis and transplantation patients receiving no treatment for high blood pressure ( $p < 0.001$ ) (Figure 19). The proportion of all RRT patients with blood pressure exceeding 130/85 mmHg has during the past five years

decreased from 81% to 76% in those receiving and from 56% to 48% in those not receiving treatment for high blood pressure. In patients receiving treatment, this change was observed only in transplantation patients, whereas in non-receivers it was observed also among dialysis patients.

Figure 20. Mortality of RRT patients  
Finnish Registry for Kidney Diseases 1980–2000

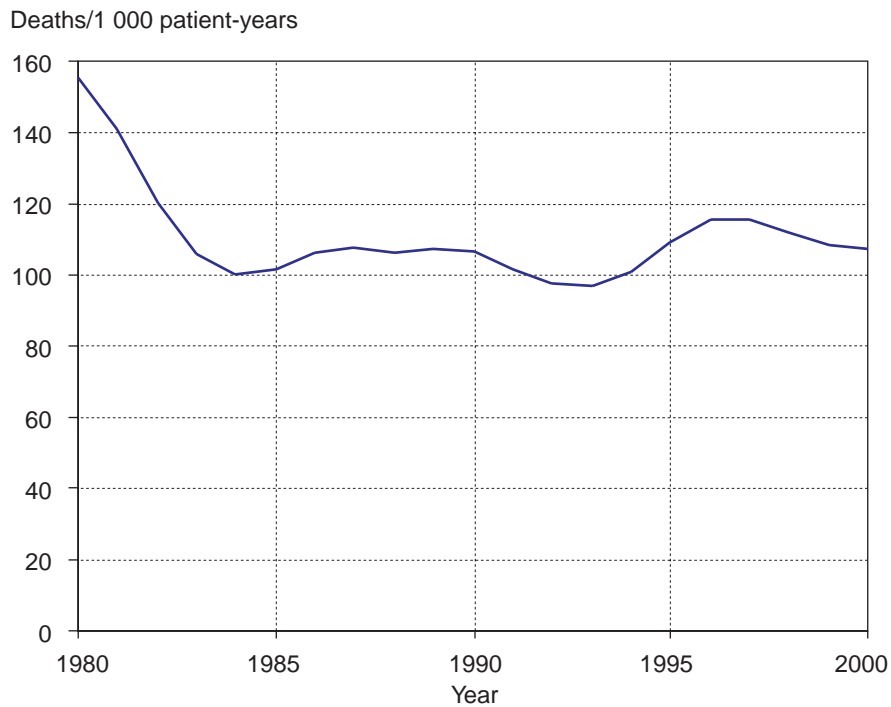


Figure 21. Mortality of RRT patients according to type of treatment  
Finnish Registry for Kidney Diseases 1980–2000



In Figures 20 to 23, mortality is given as a smoothed average of the number of deaths/thousand patient-years. The mortality of all RRT patients has remained fairly constant since 1983 (Figure 20). In the 1970s, mortality was on average 202 deaths/thousand patient-years.

The mortality of peritoneal dialysis patients decreased rapidly at the beginning of the 1980s; in the 1970s, it was

on average 625 deaths/thousand patient-years (Figure 21). Apparently patients with a worse prognosis were selected for peritoneal dialysis. When continuous ambulatory peritoneal dialysis was introduced mortality decreased. Hemodialysis patients' mortality has not changed considerably in 20 years; in the 1970s it was on average 359 deaths/thousand patient-years.

Figure 22. Mortality of transplantation patients  
Finnish Registry for Kidney Diseases 1980–2000

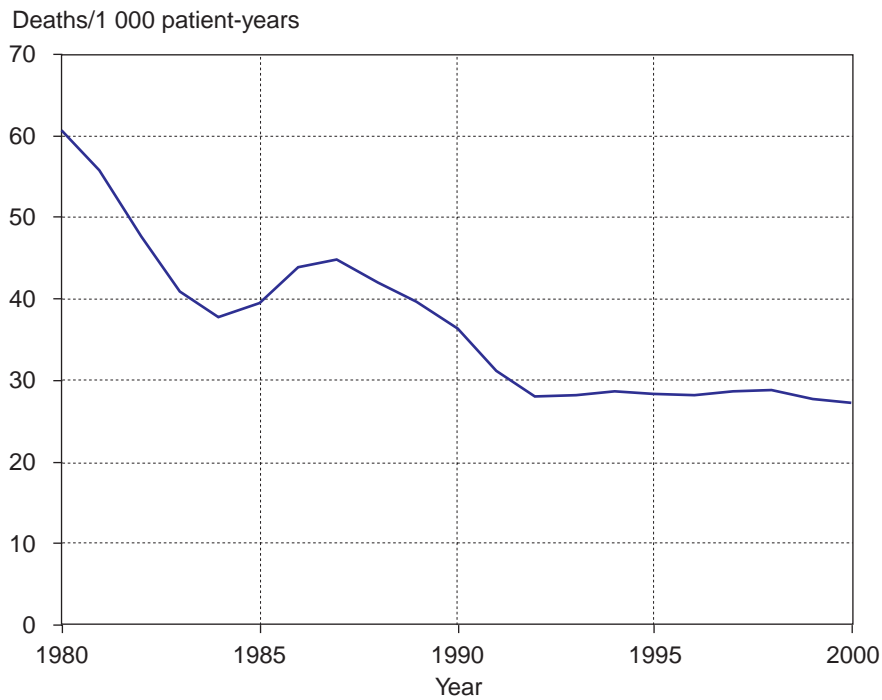
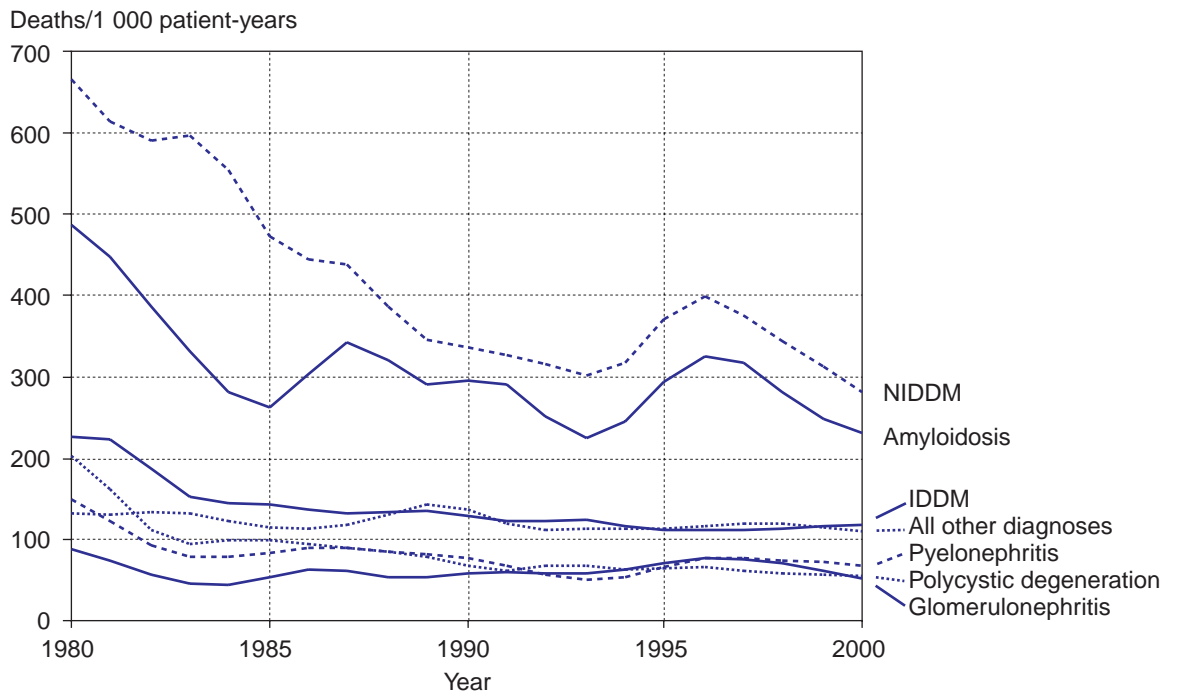


Figure 23. Mortality of RRT patients according to diagnosis  
Finnish Registry for Kidney Diseases 1980–2000



The mortality of transplantation patients decreased in the 1980s and has thereafter remained consistently below 30 deaths/thousand patient-years (Figure 22).

Figure 23 shows mortality according to diagnostic group. NIDDM and amyloidosis are associated with higher mortality than other kidney diseases.

Figure 24. Causes of death among peritoneal dialysis patients. Finnish Registry for Kidney Diseases 1996–2000

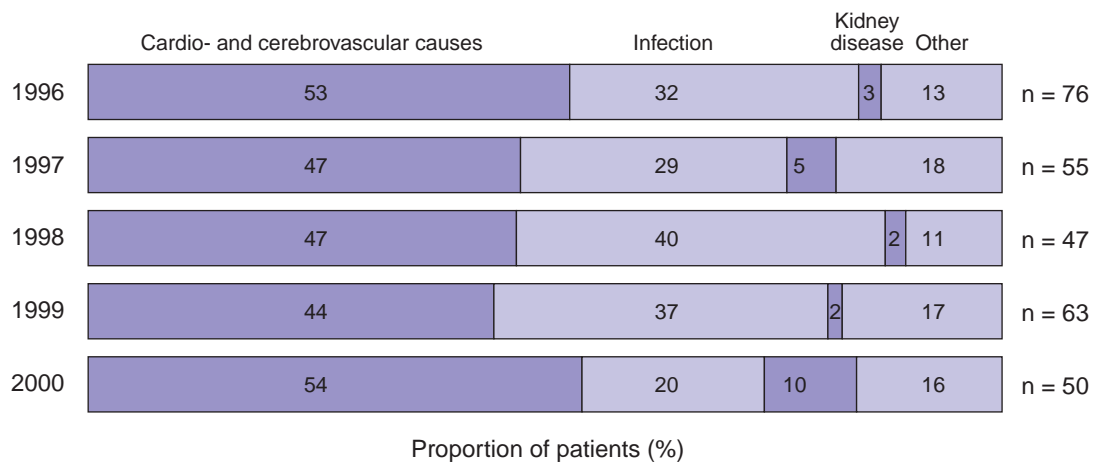


Figure 25. Causes of death among hemodialysis patients. Finnish Registry for Kidney Diseases 1996–2000

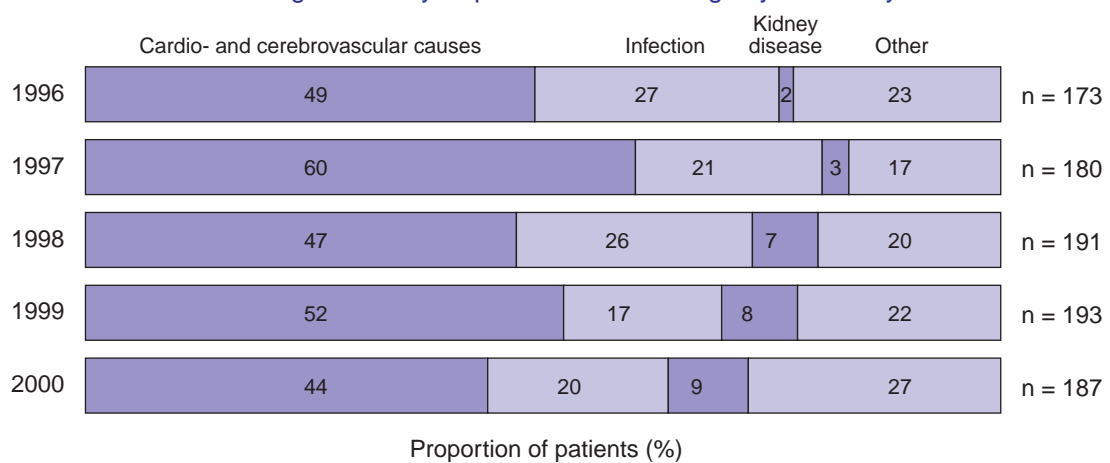
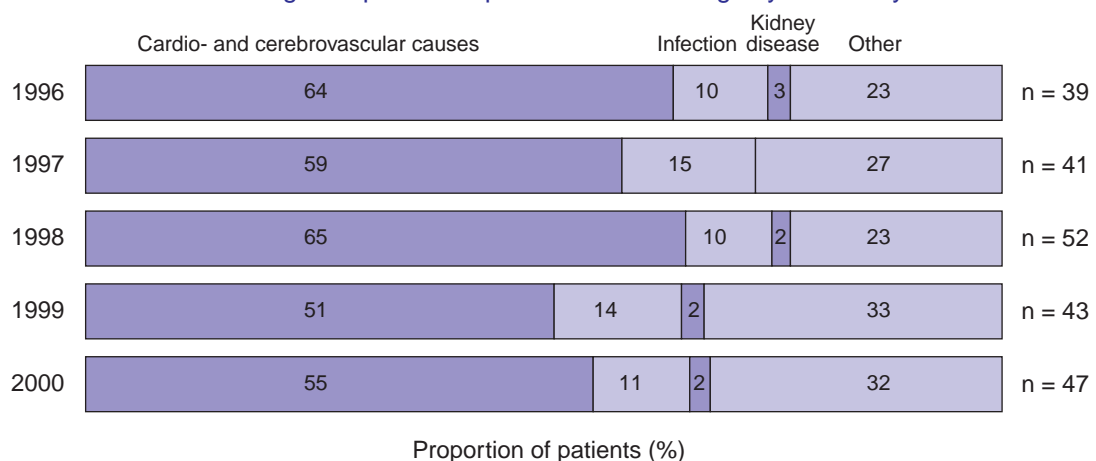


Figure 26. Causes of death among transplantation patients. Finnish Registry for Kidney Diseases 1996–2000

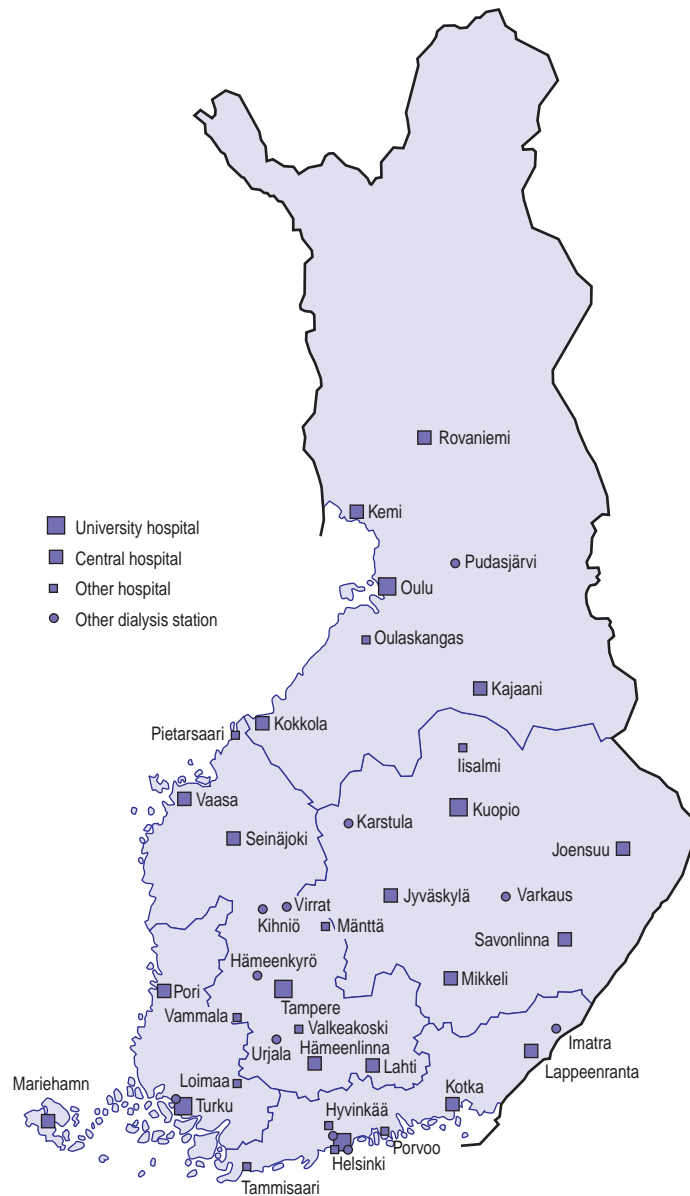


Figures 24 to 26 give causes of death for peritoneal dialysis, hemodialysis and transplantation patients. In 1996–2000, cardio- and cerebrovascular and other diseases caused a larger proportion of deaths in transplantation patients than in dialysis patients. Despite immunosuppressive treatment, infection was a much rarer cause of death in transplantation patients than in dialysis patients.

In transplantation patients, the proportion of other causes of death increased 9 percentage units in five years. Malignancies caused 13% of transplantation patients' deaths, and this proportion remained unchanged during 1996–2000. In dialysis patients, the corresponding proportion was only 4%.

# Finnish Registry for Kidney Diseases

## Report 2000



Finnish Registry for Kidney Diseases  
Pohjoinen Hesperiankatu 5 A  
FIN-00260 Helsinki  
Suomi  
Phone +358-9-43422760  
Fax +358-9-45410075  
Email Salme.Salkola@musili.fi  
Patrik.Finne@hus.fi

Suomen munuaistautirekisteri  
Pohjoinen Hesperiankatu 5 A  
FIN-00260 Helsinki  
Suomi  
Puh +358-9-43422760  
Faksi +358-9-45410075  
Sähköposti Salme.Salkola@musili.fi  
Patrik.Finne@hus.fi

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